ENCLOSURE 1
EXPANSION OPTION
Proposed Waste Discharge Requirements
for the
Placer County Department of Facility Services
Placer County Sewer Maintenance District 1 Wastewater Treatment Plant

The following is an option for allowing an increase of the design capacity of the treatment plant from 2.18 million gallons per day (MGD) to 2.7 MGD (average dry weather flow) in the National Pollutant Discharge Elimination System (NPDES) permit for the Placer County Department of Facility Services (Discharger) Placer County Sewer Maintenance District 1 Wastewater Treatment Plant (Facility). This option will be available for consideration by the Regional Water Board at the 26/27/28 May 2010 Regional Water Board meeting.

OPTION 1:
This option proposes authorization for the Discharger to increase the average dry weather flow from 2.18 MGD to 2.7 MGD.

Make the following changes to the March 2010 tentative NPDES permit:

1. Effluent Limitations and Discharge Specifications, modify Table 4 as follows:

Table 4. Facility Information

Discharger	Placer County Department of Facility Services
Name of Facility	Placer County Sewer Maintenance District 1 Wastewater Treatment Plant
Facility Address	11755 Joeger Road
	Auburn, CA 95603
	Placer County
Facility Contact, Title, and Phone	Bryan Kangas, Supervising Plant Operator, (530) 886-1100
Mailing Address	11476 C Avenue, Auburn, CA 95603
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	Existing – 2.18 million gallons per day (MGD), average dry weather flow Proposed – 2.7 MGD, average dry weather flow

2. Effluent Limitations and Discharge Specifications, modify section II.A as follows:

A. Background. Placer County Department of Facility Services (hereinafter Discharger) is currently discharging pursuant to Order No. R5-2005-0074 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079316. The Discharger submitted a Report of Waste Discharge, dated 5 October 2009, and applied for a NPDES permit renewal to discharge up to ~~2.18~~2.7 MGD of treated wastewater from the Placer County Sewer Maintenance District 1 Wastewater Treatment Plant, hereinafter Facility. The application was deemed complete on 11 November 2009.

3. Effluent Limitations and Discharge Specifications, modify the last paragraph of section II.B as follows:

   In October 2009, the Discharger submitted a Report of Waste Discharge that described plans to proceed with a project to upgrade the treatment process and expand the design capacity of the treatment plant to 2.7 MGD (average dry weather flow). ~~As discussed further in the Fact Sheet (Attachment F), this Order does not authorize the Discharger's proposed increase in flow.~~ As proposed in the Report of Waste Discharge, the upgraded and expanded Facility will include a new headworks, new primary clarifiers, new biological nutrient removal facilities, new secondary clarifiers and tertiary filters, new ultraviolet light disinfection facilities and new and renovated solids handling facilities.

4. Effluent Limitations and Discharge Specifications, modify Table 6 as follows:

Table 6. Final Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	10	15	25	--	--
	lbs/day[1]	182	273	455	--	--
	lbs/day[2]	225	338	563	--	--
Total Suspended Solids	mg/L	10	15	25	--	--
	lbs/day[1]	182	273	455	--	--
	lbs/day[2]	225	338	563	--	--
pH	standard units	--	--	--	6.5	8.2
Priority Pollutants						
Chlorodibromomethane	µg/L	0.41	--	0.82	--	--
Copper, Total Recoverable	µg/L	7.6	--	19	--	--
Dichlorobromomethane	µg/L	0.56	--	1.5	--	--
Lead, Total Recoverable	µg/L	2.3	--	6.5	--	--
Non-Conventional Pollutants						
Aluminum, Total Recoverable	µg/L	68	--	151	--	--
Ammonia Nitrogen, Total (as N)	mg/L	1.4	--	3.9	--	--
	lbs/day[1]	25	--	71	--	--
	lbs/day[2]	32	--	88	--	--
Nitrate Plus Nitrite (as N)	mg/L	10	--	--	--	--

TENTATIVE ORDER

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Nitrite Nitrogen, Total (as N)	mg/L	1.0	--	--	--	--

[1] Mass-based effluent limitations based on a permitted average dry weather flow of 2.18 MGD.

[2] Mass-based effluent limitations based on a permitted average dry weather flow of 2.7 MGD, effective upon compliance with Special Provision VI.C.6.a.

5. Effluent Limitations and Discharge Specifications, modify section IV.A.1.f as follows:

   f. Average Dry Weather Flow. The average dry weather discharge flow shall not exceed 2.18 MGD. Effective upon compliance with Special Provision VI.C.6.a, the average dry weather discharge flow shall not exceed 2.7 MGD.

6. Effluent Limitations and Discharge Specifications, delete section VI.C.1.g as follows:

   ~~**g. Increased Flow.** Upon availability of additional information indicating that an increase in flow to Rock Creek is in the best interest of the people of the State and documentation of the Discharger's progress towards regionalization, this Order may be reopened to allow an increased discharge to Rock Creek.~~

7. Effluent Limitations and Discharge Specifications, add section VI.C.4.d as follows:

   d. Ultraviolet Disinfection (UV) System Operating Specifications. Effective upon compliance with Special Provision VI.C.6.a, the Discharger shall operate the UV disinfection system to provide a minimum UV dose per bank of 100 millijoules per square centimeter (mJ/cm2) at peak daily flow, unless otherwise approved by DPH, and shall maintain an adequate dose for disinfection while discharging to Rock Creek, unless otherwise approved by DPH.

   i. The Discharger shall provide continuous, reliable monitoring of flow, UV transmittance, UV power, and turbidity.

   ii. The Discharger shall operate the treatment system to insure that turbidity prior to disinfection shall not exceed 2 NTU as a daily average, and 5 NTU more than 5 percent of the time within a 24-hour period, and 10 NTU, at any time.

   iii. The UV transmittance (at 254 nanometers) in the wastewater exiting the UV disinfection system shall not fall below 55 percent of maximum at any time.

iv. The quartz sleeves and cleaning system components must be visually inspected per the manufacturer's operations manual for physical wear (scoring, solarization, seal leaks, cleaning fluid levels, etc.) and to check the efficacy of the cleaning system.

v. The lamp sleeves must be cleaned periodically as necessary to meet the requirements.

vi. Lamps must be replaced per the manufacturer's operations manual, or sooner, if there are indications the lamps are failing to provide adequate disinfection. Lamp age and lamp replacement records must be maintained.

vii. The Facility must be operated in accordance with an operations and maintenance program that assures adequate disinfection.

8. Effluent Limitations and Discharge Specifications, modify section VI.C.6 as follows:

6. Other Special Provisions ~~— Not Applicable~~

a. Facility Expansion. The Discharger has requested an expansion of allowable flows to be discharged to Rock Creek. The permitted average dry weather flow may increase to 2.7 MGD upon compliance with the following conditions:

i. Effluent and Receiving Water Limitation Compliance. The discharge shall demonstrate compliance with Effluent Limitations IV.A and Receiving Water Surface Limitations V.A.

ii. Facility Expansions. The Discharger shall have completed construction of the upgrade and expansion project, as described in the Discharger's Report of Waste Discharge.

iii. Request for Increase. The Discharger shall submit to the Regional Water Board a request for an increase in the permitted discharge flow rate, which demonstrates compliance with items i. through ii. of this provision. The increase in the permitted discharge flow rate shall not be effective until the Executive Officer verifies compliance with Special Provisions VI.C.6.a and approves the Discharger's request.

9. Monitoring and Reporting Program (Attachment E), modify Table E-1 as follows:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	A location where a representative sample of the influent into the Facility can be collected.
001	EFF-001	Downstream from the last connection through which wastes can be admitted into the outfall.
002	EFF-002	Approximately 200 feet upstream of EFF-001. (This discharge location is only to be used when Chlorine Contact Basin No. 3 is offline for maintenance.)
--	RSW-001	In Rock Creek, 50 feet upstream from both discharge locations.
--	RSW-002	In Rock Creek, downstream of both discharge locations and just prior to the confluence of Rock Creek and Dry Creek.
--	RSW-003	In Dry Creek, just prior to the confluence of Rock Creek and Dry Creek.
--	RSW-004	In Dry Creek, 150 feet downstream of the confluence of Rock Creek and Dry Creek.
--	BIO-001	A location where a representative sample of biosolids can be obtained.
--	SPL-001	A location where a representative sample of the municipal water supply can be obtained.
--	UVS-001	Ultraviolet disinfection system.

10. Monitoring and Reporting Program (Attachment E), modify Footnote 15 of Table E-3 as follows:

[15] Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L. Monitoring for chlorine residual is not required after the Discharger submits certification to the Regional Water Board that the use of its chlorine-based disinfection system and the use of other chlorine-containing agents in its treatment process have been ceased. After certification that the use of chlorine-containing agents in the treatment process has been ceased, the Discharger must immediately restart monitoring for chlorine residual upon any unplanned use of chlorine in the treatment process.

11. Monitoring and Reporting Program (Attachment E), add section IX.C as follows:

C. Ultraviolet Disinfection System

1. Monitoring Location UVS-001

Effective upon compliance with Special Provision VI.C.6.a, the Discharger shall monitor the UV disinfection system at UVS-001 as follows:

Table E-10. Ultraviolet Disinfection System Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow rate	MGD	Meter	Continuous[1]
Turbidity[2]	NTU	Meter[3]	Continuous[1]
Number of UV banks in operation	Number	Meter	Continuous[1]
UV Transmittance	Percent (%)	Meter	Continuous[1]
UV Power Setting	Percent (%)	Meter	Continuous[1]
UV Dose[4]	MW-sec/cm^2	Calculated	Continuous[1]

[1] For continuous analyzers, the Discharger shall report documented routine meter maintenance activities, including date, time of day, and duration, in which the analyzer(s) is not in operation.
[2] Report daily average turbidity and maximum. If the influent exceeds 10 NTU, collect a sample for total coliform organisms and report the duration of the turbidity exceedance.
[3] The turbidity meter shall be stationed immediately after the filters, prior to the UV disinfection process.
[4] Report daily minimum UV dose, daily average UV dose, and weekly average UV dose. For the daily minimum UV dose, also report associated number of banks, gallons per minute per lamp, and UV transmittance used in the calculation. If effluent discharge has received less than the minimum UV dose and is not diverted from discharging to Rock Creek, report the duration and dose calculation variables associated with each incident.

12. Fact Sheet (Attachment F), modify Table F-1 as follows:

Table F-1. Facility Information

WDID	**XXXXXXXXX**
Discharger	Placer County Department of Facility Services
Name of Facility	Placer County Sewer Maintenance District 1 Wastewater Treatment Plant
Facility Address	11755 Joeger Road
	Auburn, CA 95603
	Placer County
Facility Contact, Title and Phone	Bryan Kangas, Supervising Plant Operator, (530) 886-1100
Authorized Person to Sign and Submit Reports	Will Dickinson, Deputy Director for Department of Facility Services, (530) 886-4980
Mailing Address	11476 C Avenue, Auburn, CA 95603
Billing Address	Same as Mailing Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Yes
Reclamation Requirements	N/A
Facility Permitted Flow	Existing – 2.18 million gallons per day (MGD), average dry weather flow Proposed – 2.7 MGD, average dry weather flow
Facility Design Flow	Existing – 2.18 MGD, average dry weather flow Proposed – 2.7 MGD, average dry weather flow
Watershed	Upper Coon-Upper Auburn

Receiving Water	Rock Creek
Receiving Water Type	Inland surface water

13. Fact Sheet (Attachment F), modify section II as follows:

> The Discharger provides sewerage service for the unincorporated area of North Auburn in Placer County and serves a population of approximately 16,900. The design average dry weather flow capacity of the Facility is 2.18 MGD. As described further in section II.E of this Fact Sheet (Attachment F), the Discharger is planning to ~~either upgrade the treatment process to comply with effluent limitations or to cease the discharge and connect to the City of Lincoln Wastewater Treatment and Reclamation Facility~~ upgrade and expand the Facility to provide tertiary treatment for up to 2.7 MGD.

14. Fact Sheet (Attachment F), delete the last paragraph of section II.E as follows:

> ~~As described further in section IV.D.4 of this Fact Sheet, degradation of water quality resulting from the proposed increased discharge is not in the best interest of the people of the State and is not consistent with State and federal antidegradation requirements. Furthermore, construction of the proposed expansion is not planned until December 2014 and it is uncertain whether construction would actually be completed within the term of this Order. Therefore, this Order does not authorize the Discharger's proposed increase. This Order contains a reopener to reconsider the proposed increase upon availability of additional information indicating that an increase in flow to Rock Creek is in the best interest of the people of the State and documentation of the Discharger's diligent efforts towards regionalization.~~

15. Fact Sheet (Attachment F), modify section IV.B.2.b as follows:

> **b. Flow.** The Facility was designed to provide a tertiary level of treatment for up to a design average dry weather flow of 2.18 MGD. The Discharger is proposing to expand the Facility and increase the average dry weather flow capacity to 2.7 MGD. Until expansion of the Facility, t~~T~~his Order requires that the average dry weather flow shall not exceed 2.18 MGD. Upon completion of the expansion of the Facility, this Order requires that the average dry weather flow shall not exceed 2.7 MGD.

16. Fact Sheet (Attachment F), modify Table F-3 as follows:

Table F-3. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	2.18[1,2]	--	--	--	--

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
		2.7[3,4]	--	--	--	--
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	25	--	--
	lbs/day[2,5]	182	273	455	--	--
	lbs/day[4,6]	225	338	563	--	--
	% Removal	85	--	--	--	--
Total Suspended Solids	mg/L	10	15	25	--	--
	lbs/day[2,5]	182	273	455	--	--
	lbs/day[4,6]	225	338	563	--	--
	% Removal	85	--	--	--	--
pH	standard units	--	--	--	6.0	9.0

[1] The average dry weather discharge flow shall not exceed 2.18 MGD. The average dry weather discharge flow represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the average dry weather flow effluent limitations will be determined annually based on the average daily flow over three consecutive dry weather months (e.g., July, August, and September).

[2] Applicable until completion of expansion of the Facility.

[3] The average dry weather discharge flow shall not exceed 2.7 MGD. The average dry weather discharge flow represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the average dry weather flow effluent limitations will be determined annually based on the average daily flow over three consecutive dry weather months (e.g., July, August, and September).

[4] Applicable upon completion of expansion of the Facility

[25] Based on a design flow of 2.18 MGD.

[6] Based on a design flow of 2.7 MGD.

17. Fact Sheet (Attachment F), modify section IV.C.3.c.iv(c) as follows:

(c) WQBELs. The USEPA *Technical Support Document for Water Quality-Based Toxics Control* [EPA/505/2-90-001] contains statistical methods for converting chronic (4-day) and acute (1-hour) aquatic life criteria to average monthly and maximum daily effluent limitations based on the variability of the existing data and the expected frequency of monitoring. However, because chlorine is an acutely toxic constituent that can and will be monitored continuously, an average 1-hour limitation is considered more appropriate than an average daily limitation. This Order contains a 4-day average effluent limitation and 1-hour average effluent limitation for chlorine residual of 0.011 µg/L and 0.019 µg/L, respectively, based on USEPA's NAWQC, which implements the Basin Plan's narrative toxicity objective for protection of aquatic life. The Discharger is planning to upgrade the Facility during the term of this permit to replace the existing chlorine disinfection system with a new UV disinfection system. Therefore, monitoring requirements for chlorine residual may be discontinued upon completion of the UV disinfection system.

18. Fact Sheet (Attachment F), modify Table F-9 as follows:

Table F-9. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Average Dry Weather Flow	MGD	2.18[2,3]	--	--	--	--	DC
		2.7[4,5]	--	--	--	--	
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	25	--	--	TTC
	lbs/day[2,3,6]	182	273	455	--	--	
	lbs/day[5,7]	225	338	563	--	--	
	% Removal	85	--	--	--	--	CFR
Total Suspended Solids	mg/L	10	15	25	--	--	TTC
	lbs/day[2,3,6]	182	273	455	--	--	
	lbs/day[5,7]	225	338	563	--	--	
	% Removal	85	--	--	--	--	CFR
pH	standard units	--	--	--	6.5	8.2	BP, PB
Priority Pollutants							
Arsenic, Total Recoverable	µg/L	10[3,8]	--	--	--	--	MCL
Chlorodibromomethane	µg/L	0.41	--	0.82	--	--	CTR
Copper, Total Recoverable	µg/L	7.6	--	19	--	--	CTR
Dichlorobromomethane	µg/L	0.56	--	1.5	--	--	CTR
Lead, Total Recoverable	µg/L	2.3	--	6.5	--	--	CTR
Mercury, Total Recoverable	lbs/month	0.0018[4,9]	--	--	--	--	PB
Non-Conventional Pollutants							
Acute Toxicity	% Survival	--	--	[5,10]	--	--	BP
Aluminum, Total Recoverable	µg/L	68	--	151	--	--	NAWQC
Ammonia Nitrogen, Total (as N)	mg/L	1.4	--	3.9	--	--	NAWQC
	lbs/day[2,3,6]	25	--	71	--	--	
	lbs/day[5,7]	32	--	88	--	--	
Chlorine, Total Residual	mg/L	--	0.011[6,11]	0.019[7,12]	--	--	NAWQC
Chronic Toxicity	TUc	--	--	[8,13]	--	--	BP
Electrical Conductivity @ 25°C	µmhos/cm	700[9,14]	--	--	--	--	PB
Nitrate Plus Nitrate (as N)	mg/L	10	--	--	--	--	MCL
Nitrite Nitrogen, Total (as N)	mg/L	1.0	--	--	--	--	MCL
Total Coliform Organisms	MPN/100 mL	--	2.2[10,15]	23[11,16]	--	240	Title 22

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	

[1] DC – Based on the design capacity of the Facility.
TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.
CFR – Based on secondary treatment standards contained in 40 CFR Part 133.
BP – Based on water quality objectives contained in the Basin Plan.
MCL – Based on the Primary Maximum Contaminant Level.
CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
PB – Based on the performance of the treatment system.
NAWQC – Based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
PO – Based on effluent limitations established in Order No. R5-2005-0074.
Title 22 – Based on CA Department of Public Health Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).

[2] The average dry weather discharge flow shall not exceed 2.18 MGD. The average dry weather discharge flow represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the average dry weather flow effluent limitations will be determined annually based on the average daily flow over three consecutive dry weather months (e.g., July, August, and September).

[3] Applicable until completion of expansion of the Facility.

[4] The average dry weather discharge flow shall not exceed 2.7 MGD. The average dry weather discharge flow represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the average dry weather flow effluent limitations will be determined annually based on the average daily flow over three consecutive dry weather months (e.g., July, August, and September).

[5] Applicable upon completion of expansion of the Facility

[~~2~~6] Based on a design flow of 2.18 MGD.

[7] Based on a design flow of 2.7 MGD.

[~~3~~8] Applied as an annual average concentration.

[~~4~~9] The total monthly mass discharge of mercury from the Facility shall not exceed 0.0018 lbs.

[~~5~~10] Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
Minimum for any one bioassay: 70%
Median for any three or more consecutive bioassays: 90%

[~~6~~11] Applied as a 4-day average effluent limitation.

[~~7~~12] Applied as a 1-hour average effluent limitation.

[~~8~~13] There shall be no chronic toxicity in the effluent discharge.

[~~9~~14] For a calendar year, the annual average effluent electrical conductivity shall not exceed 700 µmhos/cm.

[~~10~~15] Applied as a 7-day median effluent limitation.

[~~11~~16] Effluent total coliform organisms are not to exceed 23 MPN/100 mL more than once in any 30-day period.

19. Fact Sheet (Attachment F), modify section IV.D.4 as follows:

The Discharger developed a report titled, *Antidegradation Analysis for the Placer County SMD1 Wastewater Treatment Plant, October 2009* (Robertson-Bryan Inc.), that provides an antidegradation analysis following the guidance provided by State Water Board APU 90-004. Pursuant to the guidelines, the Antidegradation Analysis evaluated whether changes in water quality resulting from a proposed new discharge to Rock Creek (2.7 MGD of tertiary treated wastewater) are consistent with the maximum benefit to the people of the State, will not unreasonably affect beneficial uses, will not cause water

quality to be less than water quality objectives, and that the discharge provides protection for existing in-stream uses and water quality necessary to protect those uses. The Regional Water Board ~~does not~~ concurs with the Discharger's Antidegradation Analysis.

a. Water quality parameters and beneficial uses which will be affected by this Order and the extent of the impact. This Order does not adversely impact beneficial uses of the receiving water or downstream receiving waters. All beneficial uses will be maintained and protected. This Order provides for an increase in the volume and mass of pollutants discharged directly to the receiving water. 40 CFR 131.12 defines the following tier designations to describe water quality in the receiving water body.

Tier 1 Designation: *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected. (40 CFR 131.12)*

Tier 2 Designation*: Where the quality of waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control. (40 CFR 131.12)*

The tier designation is assigned on a pollutant-by-pollutant basis. The following is the potential effect on water quality parameters regulated in this Order, and was assessed in the Antidegradation Analysis:

i. Rock Creek was designated as a Tier 1 receiving water for aluminum, bis (2-ethylhexyl) phthalate, and iron because these constituents were detected in the receiving water above water quality criteria.

ii. The proposed increase in discharge would use less than 10 percent of available assimilative capacity for all constituents assessed. Thus, the proposed increased discharge will be protective of beneficial uses and will maintain greater than 90 percent of assimilative capacity in Orchard Creek.

iv. Theproposed increase in discharge would use less than 10 percent of available assimilative capacity on a mass loading basis for bioaccumulative constituents, including mercury, selenium, and total dissolved solids.

b. Scientific Rationale for Determining Potential Lowering of Water Quality. The rationale used in the antidegradation analysis is based on 40 CFR 131.12, USEPA memorandum Regarding Tier 2 Antidegradation Reviews and Significance Thresholds (USEPA 2005), USEPA Region 9 Guidance on Implementing the Antidegradation Provisions of 40 CFR 131.12 (USEPA 1987), State Water Board Resolution No. 68-16, a State Water Board 1987 policy memorandum to the Regional Water Boards, and an Administrative Procedures Update (APU 90-004) issued by the State Water Board to the Regional Water Boards.

The scientific rationale used in the antidegradation analysis to determine if the Order allows a lowering of water quality is to determine the reduction of assimilative capacity. Assimilative capacity was calculated on a mass-balanced, concentration basis and, for bioaccumulative constituents, calculated on a mass loading basis. This approach is consistent with recent USEPA guidance and addresses a key objective of the antidegradation analysis to "[c]*ompare receiving water quality to the water quality objectives established to protect designated beneficial uses*" (APU 90-004). USEPA has recommended ten (10) percent as a measure of significance for identifying those substantial lowerings of water quality that should receive a full tier 2 antidegradation review. APU 90-004 requires the consideration of "feasible alternative control measures" as part of the procedures for a complete antidegradation analysis.

The antidegradation analysis analyzed each pollutant detected in the effluent and receiving water to determine if the proposed increase in discharge from 2.18 MGD to 2.7 MGD authorized by this Order potentially allows significant increase of the amount of pollutants present in the upstream and downstream receiving water influenced by the proposed discharge. Pollutants that significantly increase concentration or mass downstream would have required an alternatives analysis to determine whether implementation of alternatives to the proposed action would be in the best socioeconomic interest of the people of the region, and be to the maximum benefit of the people of the State. Details on the scientific rationale are discussed in detail in the antidegradation analysis.

The Regional Water Board concurs with this scientific approach.

c. Alternative Control Measures. Resolution 68-16 requires that degradation of water quality be consistent with maximum benefit to the people of the State. APU 90-004 identifies factors to be considered when

determining whether the discharge is necessary to accommodate social or economic development and is consistent with maximum public benefit, which includes implementation of feasible alternative control measures which might reduce, eliminate, or compensate for negative impacts.

The Discharger considered several alternatives that would reduce or eliminate the lowering of water quality resulting from the proposed increase in discharge from 2.18 MGD to 2.7 MGD. A number of effluent disposal alternatives were assessed to determine if any alternative would substantially reduce or eliminate the lowering of water quality as a result of the proposed increase in discharge from 2.18 MGD to 2.7 MGD. These alternatives are summarized below.

~~a~~**i.** Higher level of treatment using microfiltration – The Discharger evaluated additional treatment through advanced treatment using microfiltration, in addition to the planned upgrades. The Discharger concluded that installation of advanced treatment facilities designed to eliminate all incremental changes in downstream water quality is not a feasible alternative as it would be very costly and would result in new environmental concerns associated with increased energy use.

~~b~~**ii.** Zero discharge (i.e., 100% recycling of effluent) – The Discharger evaluated recycling the additional wastewater through landscape irrigation with storage during the non-irrigation season. In particular, the Discharger evaluated recycling of wastewater for the irrigation of agricultural land in the southwest portion of Placer County; however, no viable water reuse customers have been identified by the Discharger. The reuse of wastewater for a hypothetical golf course irrigation project was also considered. However, the Discharger concluded that this alternative is not currently feasible due to the costs associated with construction and maintenance of the golf course, storage facilities, and delivery system and the lack of sufficient land to construct storage facilities.

~~c~~**iii.** Flow restricted discharge – The Discharger considered a flow-restricted discharge. However, the Discharger concluded that this option is not viable due to the lack of available dilution for most of the year and the associated costs of finding additional land suitable for expanding storage capacity to accommodate periods of no discharge.

~~d~~**iv.** Pollutant source minimization – The Discharger stated in the Antidegradation Analysis that pollutant source minimization is ongoing at the Facility. The Discharger submitted an Industrial Pretreatment Program to monitor and control sources of industrial pollutants entering the collection system in 2005. The Discharger proposed that these

activities would be continued in addition to the planned upgrades to the Facility.

ev. Connection to other wastewater facilities in the region (i.e., regionalization) – The Discharger evaluated construction of a pumping station, wastewater storage facility, and regional pipeline to connect to the City of Lincoln Wastewater Treatment and Reclamation Facility in lieu of the proposed upgrades. Due to the high costs associated with regionalization, the Discharger determined that regionalization is not currently a feasible alternative.

~~f~~vi. Change in drinking water source – The Discharger considered changing the source of drinking water. The current water source is surface water purchased through the Nevada Irrigation District and Placer County Water Agency that originates as Sierra snowpack and is taken from the Yuba River and Bear River watersheds or through Lake Spaulding. The source water quality is very high, with low turbidity and total dissolved solids. Therefore, the Discharger concluded that changing drinking water sources is not a feasible alternative to improve post-expansion receiving water quality.

The Discharger evaluated each of these alternatives in detail in the Antidegradation Analysis and submitted a summary of costs and rate increases associated with each alternative, as shown in Table F-10. As described above, the Discharger concluded that additional treatment or treatment at alternative facilities, recycling, a flow-restricted discharge, regionalization, and changing drinking water sources were infeasible.

Table F-10. Summary of Costs and Rate Increases for Alternatives Analysis

Alternative	Plan Elements	Construction Cost	Operations Cost	Annual Rate Increase	Annual Rate Increase Over Proposed Expansion
Proposed upgrade/expansion[1]	Flow equalization, biological nutrient removal, and UV disinfection system	$87,000,000	$10,321,000	$432	--
Higher level of treatment	Microfiltration added to proposed project	$5,600,000	$280,000	$468	$36
Zero discharge	181 million gallons of storage, 5 miles of pipeline, customers added to proposed project	$37,200,000	$960,000	$689	$257
Flow-restricted discharge[2]	--	--	--	--	--

Alternative	Plan Elements	Construction Cost	Operations Cost	Annual Rate Increase	Annual Rate Increase Over Proposed Expansion
Regionalization	Pipeline, reimbursements to the City of Lincoln for wastewater treatment plant expansion and collection system oversizing	$141,000,000	$11,199,095	$816	$384
Change in water supply[3]	--	--	--	--	--

[1] Past cost estimates are based on an expansion to 3.0 MGD, while the Discharger's proposed expansion would only be to 2.7 MGD. Given the current costs for construction and financing, the Discharger concludes that the past cost estimates for an expansion to 3.0 MGD are representative of the current anticipated costs for an expansion to 2.7 MGD.

[2] The Discharger did not provide cost information for this alternative because flow conditions are too infrequent or unreliable to provide any significant benefit.

[3] The Discharger did not provide cost information for this alternative because the Discharger already uses a high quality water source.

~~Table 3-1 of the Report of Waste Discharge summarized the existing and projected demands within the service area. As shown in Table 3-1, the projected demand will not surpass the current treatment capacity of 2.18 MGD until after 2020. Furthermore, the projected demand of 2.7 MGD on which the Discharger's request is based is not expected until 2034. Based on the information provided in the Report of Waste Discharge, demand is not expected to exceed the current treatment capacity of the Facility within the term of this permit. Therefore, the Regional Water Board concludes that an increase in permitted flow is not necessary at this time.~~

The Discharger reported at the April 2009 Board Meeting, and in a subsequent semi-annual progress report submitted 1 June 2009, that the Discharger is continuing to actively pursue regionalization. In a letter dated 22 February 2010, the Discharger indicated that the regionalization project would take at least 2 years to complete beyond the 5 years requested for the proposed expansion project (i.e., in 7 years) due to delays associated with the slow pace of acquiring federal funding and the need to resolve complex issues between the Discharger and other local entities. The Regional Water Board concurs that regionalization is not currently feasible.~~Given the Discharger's recent documented intent to pursue regionalization, which would occur well before the demand in the service area approaches the current permitted capacity, expansion of the Facility to accommodate wastewater flows associated with planned growth by 2034 is unnecessary.~~

The Regional Water Board adopted Resolution No. R5-2009-0028 in Support of Regionalization, Reclamation, Recycling, and Conservation for Wastewater Treatment Plants on 23 April 2009, which requires the Regional Water Board to facilitate opportunities for regionalization and consider innovative permitting options when existing NPDES permit requirements, waste discharge requirements, and/or enforcement Orders inhibit the ability to implement regionalization. Resolution No. R5-2009-0028 identifies a number of benefits to regionalization. First, coordinated management of water supplies and wastewaters on a regional basis promotes efficient utilization of water. Second, reducing discharges of wastewater into seasonal or ephemeral streams such as Rock Creek and Dry Creek reduces habitat changes to the waterbodies that occur when wastewater is discharged into stream channels at locations, volumes or times when flow is not naturally present in the streams. Lastly, while the capital investment for regionalization of wastewater collection and treatment systems may result in a higher initial cost of upgrading an existing facility to meet current regulatory requirements, costs associated with meeting future regulatory requirements and system upgrades can be spread over a larger population and will ultimately reduce the per capita costs of wastewater treatment and disposal. Regionalization will also increase the technical and economical feasibility of a higher level of wastewater treatment, allowing the treated water to be a "resource" and not merely a "waste." For instance, the City of Lincoln Wastewater Treatment and Reclamation Facility has a Master Reclamation Permit (Order No. R5-2005-0040) to use recycled water for the irrigation of fodder crops, rice, impoundments, industrial process cooling, and other purposes in the local community, whereas the Discharger determined that reclamation of its wastewater is not feasible, as described in section IV.D.4.b, above.

~~In balancing the proposed expansion against the public interest, the Regional Water Board finds that the reduction in water quality associated with the expansion is not offset by maximum public benefit to the people of the State. In particular, implementation of feasible alternative control measures (i.e., regionalization) are available that will reduce, eliminate, or compensate for the negative impacts of the proposed expansion. Therefore, the increased flows associated with the expansion cannot be permitted. This Order includes a reopener that will allow the Regional Water Board to reopen the Order to allow an increased discharge to Rock Creek upon availability of additional information indicating that an increase in flow to Rock Creek is in the best interest of the people of the State and documentation of the Discharger's diligent efforts towards regionalization.~~ In order to continue evaluating the feasibility of regionalization, this Order ~~also~~ requires annual reporting on the Discharger's efforts towards regionalization concurrent with the upgrade and expansion project.

d. Socioeconomic Evaluation. The objective of the socioeconomic analysis was to determine if the lowering of water quality in Rock Creek and Dry Creek is in the maximum interest of the people of the State. The socioeconomic evaluation considered the social benefits and costs based on the ability to accommodate socioeconomic development in the Placer County General Plan.

Given the current infrastructure, future development in the service area would rely on the Discharger and its Facility for wastewater collection, treatment, and recycled water services. The expansion of the Facility from the current permitted flow of 2.18 MGD to 2.7 MGD would accommodate planned and approved growth in the surrounding areas. Placing connection bans on the Facility to prevent increased discharges, thereby eliminating any incremental change to Rock Creek and Dry Creek water quality, would have negative effects on important socioeconomic development in the area. Should the incremental changes in water quality in Rock Creek and Dry Creek characterized herein be disallowed, such action would: (1) force future developments in the Discharger's service area to find alternative methods for disposing of wastewater; (2) require adding microfiltration or a reverse-osmosis treatment process to a significant portion of flow, and possibly other plant upgrades, to eliminate the small water quality changes; or (3) prohibit planned and approved development within and adjacent to the Discharger's service area. On balance, allowing the minor degradation of water quality is in the best interest of the people of the area and the State, compared to these other options; and is necessary to accommodate important economic or social development in the area.

e. Justification for Allowing Degradation. Potential degradation identified in the Antidegradation Analysis due to this Order is justified by the following considerations:

i. Implementation of alternatives does not provide important socioeconomic benefit to the people of the region, nor do they provide maximum benefit to the people of the State. The alternatives to the proposed project would inhibit socioeconomic growth making it economically infeasible for any new development to occur;

ii. The Discharger's planned wastewater treatment facility will produce Title 22 tertiary treated effluent that will result in minimal water quality degradation. The Discharger's planned wastewater treatment process will meet or exceed the highest statutory and regulatory requirements which meets or exceeds best practical, treatment and control (BPTC);

iii. The Order is fully protective of beneficial uses of Rock Creek and Dry Creek. The anticipated water quality changes in Rock Creek and Dry Creek will not reduce or impair designated beneficial uses and is consistent with State and federal antidegradation policies;

iv. No feasible alternatives currently exist to reduce the impacts available; and

v. The Discharger has fully satisfied the requirements of the intergovernmental coordination and public participation provisions of the State's continuing planning process concurrent with the public participation period of this Order.

20. Fact Sheet (Attachment F), add section VI.E.3 as follows:

3. Ultraviolet Disinfection System Monitoring

UV System specifications and monitoring and reporting is required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g. viruses) in the wastewater. UV disinfection system monitoring requirements are imposed pursuant to requirements established by DPH and the National Water Research Institute (NWRI) and American Water Works Association Research Foundation NWRI/AWWARF's "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*".

21. Fact Sheet (Attachment F), delete section VII.B.1.e as follows:

~~**e. Increased Flow.** The Discharger indicated in the report of waste discharge plans to upgrade the treatment process to comply with permit requirements. In addition to upgrading the Facility, the Discharger submitted a report titled Antidegradation Analysis for the Placer County SMD1 Wastewater Treatment Plant, October 2009 (Robertson-Bryan, Inc.) on 10 November 2009 for an increase of the design capacity of the treatment plant from 2.18 MGD to 2.7 MGD (average dry weather flow). As described in section IV.D.4 of this Fact Sheet, allowing an increase in flow to Rock Creek at this time is not consistent with State and federal antidegradation requirements. This reopener allows the Regional Water Board to reopen the Order to authorize an increase in flow upon submission of additional information indicating that a reduction in water quality is consistent with State and federal antidegradation requirements, and documentation of the Discharger's diligent efforts to regionalize in association with the City of Lincoln Wastewater Treatment and Reclamation Facility.~~

22. Fact Sheet (Attachment F), add section VII.B.4.d as follows:

    d. Ultraviolet Disinfection (UV) System Operating Specifications. UV disinfection system specifications and monitoring and reporting requirements are required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g. viruses) in the wastewater. UV dosage is dependent on several factors such as UV transmittance, UV power setting, wastewater turbidity, and wastewater flow through the UV disinfection system. Monitoring and reporting of these parameters is necessary to determine compliance with minimum dosage requirements established by DPH and the National Water Research Institute (NWRI) and American Water Works Association Research Foundation NWRI/AWWARF's "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*" first published in December 2000 revised as a Second Edition dated May 2003. In addition, a memorandum dated 1 November 2004 issued by DPH to Regional Water Board executive officers recommended that provisions be included in permits to water recycling treatment plants employing UV disinfection requiring dischargers to establish fixed cleaning frequency of quartz sleeves as well as include provisions that specify minimum delivered UV dose that must be maintained (as recommended by the NWRI/AWWARF UV Disinfection Guidelines).

    As described in section VII.B.4.a above, turbidity is included as an operational specification as an indicator of the effectiveness of the treatment process and to assure compliance with effluent limitations for total coliform organisms. The operational specification requires that turbidity prior to disinfection shall not exceed 2 NTU as a daily average; 5 NTU, more than 5 percent of the time within a 24-hour period, and an instantaneous maximum of 10 NTU.

    Minimum UV dosage and turbidity specifications are included as operating criteria in section VI.C.4.d of this Order and section IX.C of the Monitoring and Reporting Program (Attachment E) to ensure that adequate disinfection of wastewater is achieved.

23. Cease and Desist Order No. R5-2010-XXXX, revise Finding No. 7 as follows:

    7. On **<DATE>**, the Regional Water Board adopted Order No. R5-2010-XXXX rescinding Order No. R5-2005-0074 and prescribing renewed WDRs for the Facility. Order No. R5-2010-XXXX section IV.A.1.a contains Final Effluent Limitations for Discharge Point Nos. 001 and 002 which read, in part, as follows:

"Table 6. Final Effluent Limitations

Parameter	***Units***	***Effluent Limitations***				
		Average Monthly	***Average Weekly***	***Maximum Daily***	***Instantaneous Minimum***	***Instantaneous Maximum***
Conventional Pollutants						
Biochemical Oxygen Demand 5-day @ 20°C	*mg/L*	*10*	*15*	*25*	--	--
	lbs/day[1]	*182*	*273*	*455*	--	--
	lbs/day[2]	*225*	*338*	*563*	--	--
Total Suspended Solids	*mg/L*	*10*	*15*	*25*	--	--
	lbs/day[1]	*182*	*273*	*455*	--	--
	lbs/day[2]	*225*	*338*	*563*	--	--
Priority Pollutants						
Chlorodibromomethane	*µg/L*	*0.41*	--	*0.82*	--	--
Dichlorobromomethane	*µg/L*	*0.56*	--	*1.5*	--	--
Non-Conventional Pollutants						
Aluminum, Total Recoverable	*µg/L*	*68*	--	*151*	--	--
Nitrate Plus Nitrite (as N)	*mg/L*	*10*	--	--	--	--
Nitrite Nitrogen, Total (as N)	*mg/L*	*1.0*	--	--	--	--

[1] *Mass-based effluent limitations based on a permitted average dry weather flow of 2.18 MGD.*

[2] *Mass-based effluent limitations based on a permitted average dry weather flow of 2.7 MGD, effective upon compliance with Special Provision VI.C.6.a.*